DRAFT – April 2006

An Amendment to the Water Quality Control Plan for the Colorado River Basin Region to Establish the Coachella Valley Storm Water Channel Bacterial Indicators Total Maximum Daily Load

AMENDMENT

(Proposed changes are in reference to the Basin Plan as amended through October 2005. Proposed additions are denoted by underlined text, proposed deletions are denoted by ~~strikethrough~~ text)

To CHAPTER 4- IMPLEMENTATION, Section V. TOTAL MAXIMUM DAILY LOADS (TMDLS) AND IMPLEMENTATION PLANS, add the following new subsequent Sections and renumber accordingly:

F. Coachella Valley Stormwater Channel Bacterial Indicators Total Maximum Daily Load

1. TMDL ELEMENTS

Table F-1: Coachella Valley Storm Water Channel Bacterial Indicators TMDL Elements

ELEMENT	DISCRIPTION
Project Definition	Coachella Valley Stormwater Channel (CVSC) is on the California 303(d) List for impairment by pathogen indicator bacteria of unknown sources. This violation of water quality standards (WQSs) is a threat to public health, and impairs the following CVSC beneficial uses: Freshwater Replenishment (FRSH), Water Contact Recreation (REC I), Water Non-Contact Recreation (REC II), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), and Preservation of Rare, Threatened, or Endangered Species (RARE). Federal Clean Water Act (CWA), Section 303(d)(1)(A) requires all states to identify surface waters impaired by pollution (i.e., that do not meet WQSs), and to establish Total Maximum Daily Loads (TMDLs) for pollutants causing the impairments. As a result, a TMDL to address bacterial indicator organisms is proposed for CVSC, which has been completed pursuant to the State of California TMDL Guidance issued in June 2005.
Data Analysis	During the development of this TMDL, water quality samples were collected monthly at eight locations in the CVSC, from February to September 2003, to evaluate bacteria loading. Eleven of the 59 samples collected exceeded the Most Probable Number 400/100 ml E. coli water quality objective (WQO) in the Colorado River Basin Water Quality Control Plan (Basin Plan) and the proposed numeric target for this TMDL. To identify sources of bacteria, a DNA monitoring and analysis study was conducted from October 2003 to March 2004. The following pathogenic sources were identified in CVSC:

	avian (40%), human (25%), rodents plus other wild mammals (25%), and livestock (<3%).
Source Analysis	There are limited data available to calculate and/or estimate the actual pathogenic contributions from nonpoint sources of pollution into CVSC, and to establish appropriate controls. Preliminary data suggest contributions from urban runoff are significant. Other potential sources include bacteria re-growth, agricultural return flows, and septic system discharges. However, their contributions to CVSC are not known.
Critical Conditions and Seasonal Variation	The climate in the Coachella Valley is arid with hot summers and warm winters. The water in the CVSC originates from irrigation return flows, treated wastewater, and urban and stormwater runoff. Analysis of available water quality data suggests slightly higher concentrations of bacteria in warm months, but no patterns are apparent with flow.
Numeric Targets	Numeric TMDL targets obtained from the Basin Plan's WQOs have been established for E. coli as a log mean (Geomean) of the MPN of 126/100 ml (based on a minimum of not less than five samples during a 30-day period), or 400/100 ml for a single sample.
Linkage Anaysis	There is a one-to-one relationship between loading allocations and numeric targets in this TMDL. For example, a 30-day geometric mean wasteload/load allocation of 126 MPN/100 ml for E. coli at the point of discharge guarantees 126 MPN/100 ml or less in the CVSC. The potential for increased concentration downstream due to growth and decay dynamics should be offset by dilution from agricultural return and operational spill flows.
TMDL Calculations and Allocations	A TMDL is a numerical calculation of the loading capacity of a water body to assimilate a certain pollutant and still attain all WQSs. The TMDL is the sum of the individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources and natural background sources, and a margin of safety (MOS) to address uncertainties. Discharges from all current and future point sources and nonpoint sources of pollution to the CVSC shall not exceed WLAs and LAs identified in the Numeric Targets above. The allocations are applicable throughout the entire stretch of CVSC year-round. The numeric target concentrations are based on extensive epidemiological studies conducted by the USEPA and others. To address the uncertainty concerning bacterial die-off and re-growth dynamics in CVSC, and to better address critical conditions and seasonal variations, this TMDL provides a MOS by including a monitoring and review plan that uses data collected during implementation to evaluate TMDL effectiveness and the need for revision.
Monitoring Plan	The monitoring plan will include a sufficient number of monitoring stations (a minimum of nine monitoring stations located in the CVSC) and monitoring events to adequately address all potential sources of bacteria. The monitoring plan will also include sampling of a suite of constituents designed to evaluate nutrient impacts on bacteria re-growth and die-off. First year of the monitoring plan will include bi-weekly water sample collection at each sampling station. The collected water samples will be analyzed for E. coli, Nitrogen (ammonia,

	nitrate, and nitrite), Phosphorous (total phosphorus, and soluble orthophosphates), and Biochemical Oxygen Demand.

2. IMPLEMENTATION ACTIONS FOR ATTAINMENT OF TMDL

The implementation plan will consist of two phases and begin 90 days following USEPA approval of the TMDL. Phase I actions will take three years to complete and will focus on monitoring and controlling pathogens associated with wastewater discharges from NPDES facilities, and from urban and stormwater runoff. Regional Board staff will coordinate closely with USEPA to address waste discharges from tribal lands. If WQOs are not achieved by the end of Phase I, Regional Board staff will implement additional actions to control pathogenic sources in Phase II. Enforcement action against violators of the TMDL will occur in both phases if necessary. This approach provides for immediate control of known pathogenic sources while allowing time for additional monitoring to assess TMDL implementation, effectiveness, and need for modification.

2.1 Phase I Implementation Actions

Phase I actions will occur within three years, and begin after USEPA approves the TMDL. Phase I requires:

- Revising NPDES permits for the three wastewater treatment facilities (WWTFs)discharging into CVSC to include monitoring and reporting for E. coli in effluent;
- Monitoring CVSC for bacteria loading from Kent Seatech Corporation (KSC) and revise its NPDES permit, if necessary. Currently, KSC, a fish farm, has an NPDES permit to discharge to CVSC. However, monitoring for bacteria is not required in KSC's NPDES permit due to the nature of its discharge;
- A written report from the USEPA describing measures to ensure waste discharges from tribal property do not violate or contribute to a violation of this TMDL;
- Revising municipal stormwater permits for Riverside County Flood Control and Water Conservation District (RCFCWCD), Coachella Valley Water District (CVWD), and co-permittees to include monitoring and reporting for E.coli, and issue similar stormwater permits to other entities/municipalities discharging to CVSC (if any); and
- Monitoring, tracking, and surveying CVSC to determine if Phase I activities achieve bacteria WQOs.

2.2 Phase I Implementation Responsible Parties and Schedule

The time schedule and responsible party for implementing Phase I actions are provided in Table F-2 below.

Table F-2: Phase I Actions and Time Schedules

Due	Action
90 days after USEPA approves the TMDL	Pursuant to a request from the Regional Board, the CVWD develops a two-year water quality monitoring program for the purpose of implementing this TMDL. A QAPP shall be developed and submitted to the Regional Board Executive Officer for review and approval.

	Monitoring data will be provided to Regional Board staff on a monthly basis and will be used to assess contributions of bacteria to CVSC from anthropogenic or municipal sources (stormwater, agricultural drains, urban runoff, and others).
90 days after USEPA approves the TMDL	Regional Board staff develops a plan to conduct TMDL surveillance and track TMDL activities. The objectives of the plan are to assess monitoring data, measure milestone attainment, and determine compliance with the TMDL.
90 days after USEPA approves the TMDL	Pursuant to a request from the Regional Board, the USEPA submits a technical report describing measures to ensure that waste discharges to CVSC from tribal land do not violate or contribute to a violation of this TMDL.
1 year after USEPA approves the TMDL	Regional Board staff completes revising NPDES and municipal stormwater permits for discharges into CVSC to include monitoring and reporting for E. coli in effluent.
3 years after USEPA approves the TMDL	Regional Board staff submits a written report to the Regional Board describing monitoring results, milestone attainment, and the need to revise the TMDL.

2.3 Phase II Implementation Actions

Actions taken in Phase I will determine whether WQOs have been achieved, sources of bacterial pollution have been identified, and whether additional actions are required in Phase II to meet WQOs. If monitoring and assessment in Phase I indicate that waste discharges to CVSC from anthropogenic or municipal activities violate this TMDL, and that violations persist despite recommended operation and maintenance procedures, staff will require responsible parties to select and implement management practices (MPs) for Phase II, which may include alternative means for wastewater storage, treatment, and disposal. Regional Board staff may consider revising WQOs for CVSC to address natural background sources of bacteria. This revision will be accomplished through a Site Specific Objective (SSO) after completing a Use Attainability Analysis (UAA). The SSO will be developed by 2014 if needed. Phase II actions will be implemented from 2009 to 2014. Possible scenarios that may follow Phase I monitoring and assessment are provided below:

- If urban runoff causes violations of this TMDL, responsible parties will implement site-specific MPs to eliminate violations. These MPs may include alternative means for wastewater storage, treatment, and disposal.
- If waste from domestic animals causes violations of this TMDL, a “pooper-scooper” education program may be implemented.
- If wildlife waste causes violations of this TMDL, infiltration swales or retention ponds may be constructed.
- If wastewater from minor animal facilities not regulated by the NPDES program causes violations of this TMDL, responsible parties may be required to prepare and implement waste management plans to contain, control, and manage wastewater, runoff, and animal solids.
- If re-growth due to nutrient loading from permitted WWTPs and the Kent Sea Tech fish farm causes violations of this TMDL, facility permits may be updated to include more stringent nutrient objectives.

- If septic system discharges cause violations of this TMDL, replacing domestic and commercial leach field systems with alternative systems, such as central collection with delivery to a community WWTP, may be considered.
- If non-controlled natural background sources cause violations of this TMDL, Regional Board staff may consider revising WQOs for CVSC to address natural background sources of bacteria. This revision will be accomplished through a SSO after completing a UAA.

2.4 TMDL Review Schedule

Annual reports will be provided to the Regional Board describing progress in attaining milestones. The reports will assess:

- Water quality improvement in terms of E. coli concentration;
- Milestones achieved, delayed, or not achieved, and why; and
- Compliance with Regional Board orders and requests.

2.4 Triennial Review

Federal law requires states to hold public hearings to review WQSs, and modify/adopt standards as appropriate (CWA Section 303(c); 40 CFR Section 131.20). State law requires formulating and periodically reviewing and updating regional water quality control plans (Basin Plan) (CWC Section 13240). All Basin Plan amendments and supporting documents adopted by the Regional Board must be submitted to the SWRCB, and then OAL, for review and approval. Lastly, the USEPA has final approval authority for Basin Plan amendments concerning surface waters.

The first review of this TMDL is scheduled for completion three years after USEPA approves the TMDL to provide adequate time for implementation and data collection. Subsequent reviews will be conducted concurrently with the Triennial Review of the Basin Plan. The TMDL review schedule is shown below in Table F-3.

Table F-3: TMDL Review Schedule

Activity	Date
USEPA Approval	2006
Terminate First TMDL Review, and conduct Regional Board Public Hearing	2009-2010
Terminate Second Review and Conduct Regional Board Public Hearing	2012-2013
Etc.	

Monitoring results and progress toward milestone attainment will be provided during Triennial Review public hearings. If TMDL progress is insufficient, staff will recommend to the Regional

Board additional MPs to control pollutant sources, enforcement action, TMDL revision, or other means to achieve WQOs.

This proposed review schedule reflects the Regional Board's commitment to periodic review and refinement of this TMDL, via the basin plan amendment process.